UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte LOUIS ROBERT LITWIN

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Appeal 2009-011704
Application 10/567,717
Technology Center 2400

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Before HOWARD B. BLANKENSHIP, JOHN A. JEFFERY, and
THU A. DANG, *Administrative Patent Judges.*

JEFFERY, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-12 and 14-21. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellant's invention detects the presence of a Wireless Local Area Network (WLAN) by identifying energy fluctuations in a signal without needing to activate a WLAN baseband circuit or recover a carrier. *See generally* Spec. 1-2, 8-10; Figs. 2-4, 8. Claim 1 is illustrative with key disputed limitations emphasized:

> 1. A method, comprising:
> scanning, by a wireless local area network scanner in a wireless device, to detect the presence of a wireless local area network WLAN;
> detecting the presence of said wireless local area network by employing said wireless local area network scanner *to identify energy fluctuations without a wireless local area network baseband circuit being activated to process data*;
> contacting a base station of said wireless local area network by the wireless local area network baseband circuit in said wireless device in response to detection of said wireless local area network to request location of said base station; and
> receiving location of said wireless local area network.

The Examiner relies on the following as evidence of unpatentability:

Sundar	US 2003/0134650 A1	July 17, 2003
Hsu	US 2004/0205158 A1	Oct. 14, 2004 (filed Feb. 24, 2003)
Rao	US 2004/0264395 A1	Dec. 30, 2004 (filed June 25, 2003)
Bahl	US 7,110,783 B2	Sept. 19, 2006 (filed Apr. 17, 2002)

Brandon Ogilvie, *Clock Solutions for WiFi (IEEE 802.11)*, Pericom
Semiconductor, 1-4, (2003), *available* at
http://www.pericom.com/pdf/applications/AN070.pdf ("Ogilvie").

Applicant's Admitted Prior Art (Spec. 10:15-18) ("APA").

THE REJECTIONS

1. The Examiner rejected claims 1-4, 6, 7, 9-12, and 15-21 under 35
   U.S.C. § 103(a)[1] as unpatentable over Hsu and APA. Ans. 4-7.[2]

2. The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as
   unpatentable over Hsu, APA, and Rao. Ans. 7-8.

3. The Examiner rejected claims 8 and 14 under 35 U.S.C. § 103(a) as
   unpatentable over Hsu, APA, and Sundar. Ans. 8-9.

THE OBVIOUSNESS REJECTION OVER HSU AND APA

Regarding representative claim 1, the Examiner finds that Hsu detects
presence of a WLAN, but does not explicitly teach doing so by identifying
energy fluctuations without activating a WLAN baseband circuit as claimed.
Ans. 4-6, 10-13. The Examiner, however, finds that this feature would have
been obvious in view of Appellant's admission in the Specification
regarding the frequency-reference accuracy specified in the IEEE 802.11b
standard which is said to enable detection without the baseband circuit's
automatic frequency control capabilities. *Id.*

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[1] Although the Examiner erroneously indicates that this rejection is based on
§ 102, we nonetheless provide the correct statutory basis here (§ 103).
Accord Br. 7; Ans. 3 (confirming the status of this rejection under § 103).
[2] Throughout this opinion, we refer to the Appeal Brief filed November 24,
2008 and the Examiner's Answer mailed December 19, 2008 (supplemented
June 4, 2009).

Appellant argues that the Examiner mischaracterized Appellant's discussion in the Specification as admitted prior art since Appellant merely indicated that that the frequency-reference accuracy specified in the standard was known in the art—not detecting WLAN presence by identifying energy fluctuations without activating a WLAN baseband circuit (claim 1) or performing carrier recovery (claim 9) which are significant features of the claimed invention recognized only by Appellant. Br. 9-12, 19-20.

ISSUES

Under § 103, has the Examiner erred by finding that Hsu and APA collectively would have taught or suggested detecting WLAN presence via scanning to identify energy fluctuations without (1) activating a WLAN baseband circuit to process data as recited in claim 1, and (2) performing carrier recovery as recited in claim 9?

FINDINGS OF FACT (FF)

1. According to Appellant:

Abrupt periodic changes in noise-like energy (e.g., energy fluctuations in the [Radio Frequency (RF)] signal) will indicate activity resulting from medium access control (MAC) layer processes in WLANs. In one embodiment, the WLAN energy detector 338 scans for energy fluctuations that correspond to periodic beacons transmitted in the RF signal. For example, in IEEE 802.11 standards, beacons are periodically transmitted at a programmable rate (e.g., typically 10 Hz). Detecting the presence of these 10 Hz energy fluctuations in the RF signal can provide an indication of the presence of a WLAN.

Spec. 8:15-23.

2. According to Appellant:

To detect the energy pulses 806, the present invention employs the energy change detector 516. As described below with respect to Figure 6, the energy change detector 516 detects the energy pulses 806 and generates a WLAN present signal to send to the controller 330. Since the present invention is only scanning for the presence of energy fluctuations in an RF signal, and is not recovering data from the RF signal, the present invention advantageously obviates the need to synchronize the RF signal and perform carrier recovery. The frequency reference accuracy specified in WLAN standards (e.g., ±25 ppm as specified in the IEEE 802.11b standard) can allow the [phase-locked loop (PLL)] circuit 314 to operate without automatic frequency control (AFC) provided by the WLAN baseband circuitry. As such, the WLAN baseband circuitry 208 does not have to be activated to detect the presence of the WLAN, thereby conserving power and saving battery life in the mobile device.

Spec. 10:8-20.

3. In one embodiment, Hsu's Mobile Station (MS) 300 has two tuners ("A" and "B") that can simultaneously tune to WLAN and cellular frequencies, respectively. When the MS is within range of accessing Access Point (AP) 320, tuner A 304 scans for a WLAN beacon that the AP transmits periodically and identifies the WLAN. Hsu, ¶ 0078, Fig. 6.

4. One WLAN protocol defined by IEEE 802.11 allows the MS to scan the WLAN passively or actively. In passive scanning, the MS listens for the WLAN beacon sent by the AP on WLAN frequencies, where the beacon contains the AP's ESSID. If the AP's ESSID matches that stored in the MS's ESID list, the WLAN is detected. In active scanning, the MS sends a Probe Request containing the MS's ESSID to the AP which returns a Probe Response if the received ESSID matches that of the AP. Hsu, ¶ 0083; Fig. 6.

5. Ogilvie includes the text "09/05/03" in the bottom shaded margin on all pages. Ogilvie, at 1-4.

6. The present application was filed February 8, 2006 under 35 U.S.C. § 371 in connection with PCT/US03/26419 filed August 22, 2003.

7. Since messages in Bahl are passed between low-power transceivers 100, 102 and host transceiver 212 over a low-power control channel distinct from the primary communication channel (e.g., an 802.11 channel), the wireless computing devices' standard high-power cards need not be used. Bahl, col. 9, ll. 4-12; Fig. 4.

ANALYSIS

Claims 1-4, 6, 7, and 16-21

We begin by noting that the key disputed limitations in this appeal are negative limitations, namely detecting WLAN presence by identifying energy fluctuations *without* (1) activating a WLAN baseband circuit to process data (claim 1), or (2) performing carrier recovery (claim 9). Although permissible,[3] negative limitations merely recite what a claim lacks and are thus broad by their very nature. Therefore, to show error in the Examiner's findings of what claims lack via negative limitations, Appellant must show that the cited prior art has those features. That has simply not been done here.

The Examiner acknowledges that Hsu does not *explicitly* teach detecting WLAN presence by identifying energy fluctuations without

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[3] *See generally Animal Legal Defense Fund v. Quigg*, 932 F.2d 920, 923 (Fed. Cir. 1991) ("The use of a negative limitation to define the metes and bounds of the claimed subject matter is a permissible form of expression.") (citation omitted).

activating a WLAN baseband circuit as claimed, but cites APA to evidence this teaching. Ans. 4-6, 10-13. We emphasize (as does the Examiner) the term "explicitly" here, for the record before us strongly suggests that Hsu at least implicitly teaches this feature.

First, a key aspect of Hsu's WLAN detection function is scanning for a WLAN beacon that is transmitted *periodically* (FF 3)—a non-continuous transmission that, when received, identifies the associated energy fluctuations with each transmission. That is, the respective signals associated with each beacon transmission have greater signal strength relative to the periods between transmissions, and therefore constitute periodic energy fluctuations that are identified when received. That Hsu graphically depicts these periodic transmissions with multiple, spaced upward arrows in Figure 6 only bolsters this conclusion.

Second, Appellant notes in the Specification that under IEEE 802.11 standards, beacons are periodically transmitted at a programmable rate, typically 10 Hz. FF 1. Notably, this very protocol is used in Hsu. FF 4. To be sure, Hsu's scanning techniques involve comparing particular identifiers contained in either the beacon signal or other signals as Appellant argues (Br. 11; FF 4), and therefore would involve data processing. But that does not mean that the data processed via the identified energy fluctuations (i.e., the received periodic beacon signal) would necessarily be done *by activating a WLAN baseband circuit*[4] which would run counter to the recited negative

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[4] The term "baseband" is defined as "[t]he frequency band occupied by all the transmitted signals that modulate a particular carrier. . . . [An] example is the band containing all the modulated subcarriers in a carrier system." Neil Sclater & John Markus, MCGRAW-HILL ELECTRONICS DICTIONARY 37 (6th ed. 1997).

limitation. Appellant has identified no such circuit in Hsu, nor will we speculate in this regard here in the first instance on appeal. Simply put, not only has Appellant not shown that Hsu's WLAN detection involves or is otherwise limited to a WLAN baseband circuit, but Appellant has likewise failed to show that omitting such a circuit (even if it were used in Hsu) or replacing such a baseband circuit with equivalent functionality for signal processing would not have been obvious.

Therefore, even assuming that Appellant's admission in the passage relied upon by the Examiner is limited to frequency-reference accuracy specified in the IEEE 802.11b standard as Appellant contends (Br. 11-12; FF 2), we still fail to see why it would not have been obvious to detect WLAN presence by identifying energy fluctuations *without* activating a WLAN baseband circuit to process data in Hsu for the reasons noted above.[5]

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[5] Although the Examiner cites an additional reference to Bahl (Ans. 11-12), this reference is only marginally relevant here regarding the core issue in dispute, namely whether the prior art identifies energy fluctuations *without* activating a WLAN baseband circuit to process data as claimed. Although Bahl indicates that a low-power control channel can be used to pass messages in lieu of a higher-power communications channel (FF 7), it is unclear whether a WLAN baseband circuit would or would not be used to this end. And to the extent that the Examiner relies on Ogilvie as additional support in this regard (Supp. Ans. (Evidence Relied Upon section)), this reference does not qualify as prior art since it published after the effective filing date of the present application as Appellant indicates. Br. 12-13 (citing Exh. A in Ev. App'x). *Compare* FF 5 *with* FF 6.

We are therefore not persuaded that the Examiner erred in rejecting representative claim 1, and claims 2-4, 6, 7, and 16-21 not separately argued with particularity.[6]

Claims 9-12 and 15

We likewise sustain the Examiner's rejection of claim 9 which recites, in pertinent part, detecting WLAN presence via scanning to identify energy fluctuations *without* performing carrier recovery. As with the negative limitation of claim 1, Appellant has not shown that Hsu's WLAN detection involves carrier recovery to run counter to the negative limitation.

Apart from merely asserting that carrier recovery is performed to extract data from a WLAN signal (Br. 20), Appellant provides no evidence on this record to support this assertion, at least regarding Hsu's system. Nor will we speculate in this regard here in the first instance on appeal. And even assuming, without deciding, that Hsu recovers a carrier to process received signals or data (a finding that has not been made on this record in any event), Appellant has not shown that replacing this technique with equivalent functionality (or omitting it altogether) for signal processing would not have been obvious.

We are therefore not persuaded that the Examiner erred in rejecting representative claim 9, and claims 10-12 and 15 not separately argued with particularity.

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[6] Although Appellant nominally argues claims 16-21 separately (Br. 23-24), the arguments are similar to those for claim 1. Our analysis regarding claim 1 therefore applies to these claims as well.

THE OTHER OBVIOUSNESS REJECTIONS

We will also sustain the Examiner's obviousness rejections of claims 5, 8, and 14. Ans. 7-9. Appellant has not particularly pointed out errors in the Examiner's reasoning to overcome the Examiner's obviousness conclusions, but merely reiterates similar arguments made in connection with claims 1 and 9, and that the additional cited references do not cure those deficiencies. Br. 17-18, 20-23. We are not persuaded by these arguments, however, for the reasons previously discussed. The rejections are therefore sustained.

CONCLUSION

The Examiner did not err in rejecting claims 1-12 and 14-21 under § 103.

ORDER

The Examiner's decision rejecting claims 1-12 and 14-21 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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